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QUALITY ASSESSMENT CASE STUDY

Assessing Malaria Treatment and Control at Peer Facilities in Malawi

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About this series

The *Case Study Series* presents real applications of Quality Assurance (QA) methodologies in developing countries at various health system levels, from national to community. The series focuses on QA applications in maternal and reproductive health, child survival, and infectious diseases. Each case study focuses on a major QA activity area, such as quality design, quality improvement, communication and development of standards, and quality assessment. In some cases, more than one QA activity is presented.

Quality assessment is the measurement of the quality of healthcare services. A quality assessment measures the difference between expected and actual performance to identify opportunities for improvement. Performance standards can be established for most dimensions of quality, such as technical competence, effectiveness, efficiency, safety, and coverage. Where standards are established, a quality assessment measures the level of compliance with standards. For dimensions of quality where standards are more difficult to identify, such as continuity of care or accessibility, a quality assessment describes the current level of performance with the objective of improving it.

A quality assessment frequently combines various data collection methods to overcome the intrinsic biases of each method alone. These methods include direct observation of patient-provider encounters, staff interview, patient focus group, record review, and facility inspection, among others. The assessment is often the initial step in a larger process, which may include providing feedback to health workers on performance, training and motivating staff to undertake quality improvements, and designing solutions to bridge the quality gap.

This case study describes how staff from 26 clinics, dispensaries, and hospitals in one district in Malawi assessed the quality of malaria treatment and prevention at the facilities of their peers. The assessment provided information for the design of the district-level plan for malaria services.

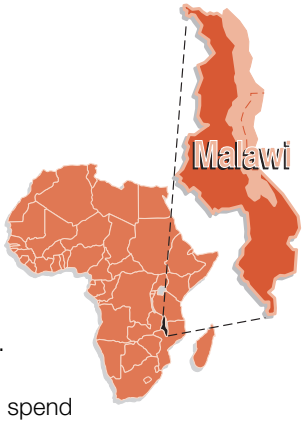
Acknowledgments

The Ministry of Health and Population of Malawi performed the work described in this case study. The case study is based on information provided by Lynne Miller Franco and Maria Francisco. It was written by Ya-Shin Lin and Lynne Miller Franco, with contributions from Dina Towbin. Technical and editorial review was provided by Lani Marquez and Diana Silimperi.

Recommended citation

Lin Y and Franco LM, 2000. Assessing malaria treatment and control at peer facilities in Malawi. *Quality Assurance Project Case Study.* Published for the U. S. Agency for International Development (USAID) by the Quality Assurance Project (QAP): Bethesda, Maryland, U.S.A.

Assessing Malaria Treatment and Control at Peer Facilities in Malawi



Background

In Malawi, a country of 10 million people, 90 percent live in rural areas. Because malaria is transmitted by a mosquito vector, rural communities are particularly affected. The Secretary of Health recently announced that on average, Malawians spend at least $35 every year on malaria, a significant amount where per capita income is below $200.[1] A 1994 study found that overall direct expenditure on treatment of malaria among very low income household members surveyed was 28 percent of their annual income.[2] Not only the poor but also the young carry a disproportionate share of the burden of malaria. At least 40 percent of all deaths of children under the age of two in Malawi result from malaria.[3]

To improve service delivery and quality for malaria, the Ministry of Health and Population (MOHP) began the Blantyre Integrated Malaria Initiative (BIMI) in 1996 to pilot test methods in malaria prevention and treatment for pregnant women and children under five years of age. Blantyre, a largely urban district with a population of nearly 500,000, was chosen as the launch site for the initiative. The BIMI built on prior malaria control work in the country and on new national malaria guidelines developed by the MOHP's National Malaria Control Programme, as well as the World Health Organization (WHO) algorithm for management of the ill child. The treatment

standards had been disseminated to all providers in 1993 in the form of the Malawi National Malaria Guidelines, the Malawi Standard Treatment Guidelines, and the Malawi Prescribers Companion.

In January 1996, an advisory committee was formed to guide BIMI efforts. The committee was comprised of Blantyre's District Health Management Team (DHMT), representatives from the National Malaria Control Committee, the Regional Health Office, the central teaching hospital's Pediatric Malaria Research Project, a private obstetrician, and a staff member from Quality Assurance Project (QAP). The committee decided to carry out a baseline quality assessment of malaria services to get the information needed to design BIMI. Because the data would be used to plan changes for the district facilities, the committee felt this was an excellent opportunity to build ownership of the assessment among facility staff. Thus, staff from all district facilities participated in the training for implementation and the assessment. The 26 facilities covered by the assessment included 17 MOHP health clinics and dispensaries, five local government maternities, one private hospital, and three mission facilities.

Designing and Preparing for the Assessment

Definition of performance standards and indicators. The advisory committee determined the specific information to be collected through the assessment. They selected quality of care indicators in accordance with the national malaria guidelines.

Instrument design. The committee decided that information should be gathered using a multi-pronged approach that focused on three main types of clinical services: treatment of children under-five with fever, treatment of pregnant women with fever, and prevention of malaria in pregnant women. Information would also be collected on case management of severe febrile illnesses and severe anemia, supervision of care, and home treatment. QAP staff drafted 11 data collection instruments (see Figure 1) based on Malawi's malaria

Figure 1. Data Collection Instruments and Methods

1. Observation: management of sick child under 5 years of age
2. Observation: treatment of pregnant women with fever seen in antenatal clinic or outpatient department.
3. Observation: prevention of malaria in pregnant women
4. Exit interview with caretaker: treatment of children under five
5. Exit interview with pregnant women diagnosed with malaria
6. Exit interview with pregnant woman: prevention of malaria in pregnant women
7. Heath worker interview: management of sick children under 5 years of age
8. Health worker Interview: prevention and treatment of malaria in pregnant women
9. Facility inventory checklist
10. General clinic information
11. Health worker group discussion

standards and the World Health Organization Integrated Management of Childhood Illness (IMCI) algorithm. BIMI advisory committee members field-tested and subsequently revised the instruments.

Selection of personnel to carry out the quality assessment. The DHMT decided to use peers as data collectors, selecting providers who were either a medical assistant or nurse from each of the 26 Blantyre facilities to carry out the assessment. The individuals chosen had no experience in data collection. Supervising the collection of data were five district-level staff, many with previous survey experience. They were the Regional and District Malaria Coordinators, the District Environmental Health Officer, the Maternal and Child Health Coordinator for the city of Blantyre, and a mission facility representative.

Training of data collection teams. In May 1996, the data collectors and supervisors attended a five-day training workshop led by MOHP malaria experts and QAP staff. Training began with a self-assessment of knowledge of malaria treatment and prevention guidelines. That led to an intensive discussion of standards. A presentation on the data collection forms and their content followed. Participants then spent a day practicing and field testing the data collection forms at the central teaching hospital's under-five and antenatal clinics. Supervisors received an additional half-day of training on data supervision issues and techniques.

Collecting Quality Data

Deployment of data collection teams. Shortly after the training workshop, six data collection teams were formed, each with four to five members. The teams conducted the assessment in all selected facilities in Blantyre over an eight-day period. Each team observed colleagues (i.e., peers) at a facility other than their own. To ensure coverage of the four MOHP facilities that were staffed by a single provider, the District Health Office arranged for temporary replacements to cover these facilities during the training and data collection. The four MOHP facility staff then returned to their facilities to be observed by other teams.

Data collection. At each facility, teams observed and conducted exit interviews for each type of service provided over at least one entire clinic session (i.e., one day). At the less busy facilities, teams remained on site an additional day to obtain information on at least 10 fever cases in children and 10 antenatal consultations. During each visit, teams interviewed providers, facilitated group discussions, and inventoried supplies. They also observed staff treating and providing malaria prophylaxis to pregnant women and sick children. By the conclusion of the assessment, the teams had observed over 638 client-provider interactions at 34 clinic sessions (18 sessions at outpatient departments and 16 sessions at antenatal clinics). Table 1 shows the sample size for each data collection method. A supervisor accompanied each team to

review data collection forms and observe the data collectors as they used the various instruments. QAP staff provided an additional layer of supervision on a random basis.

Results: Interpreting and Using Assessment Findings

Data compilation. Regional and DHMT staff compiled the qualitative data collected. Because of the volume of quantitative data, QAP facilitated computerized data entry.

Discussion of findings. In June 1996, the Blantyre DHMT and QAP staff led a one-day workshop to interpret and discuss the assessment results. (It was held on a Sunday so

Table 1. Data Collected by the Peer Assessment Teams

Method	Sample Size (N)
Observations of encounters with under-fives with fever	252
Exit interviews with caretakers of under-fives with fever	254
Observations of encounters with pregnant women with fever	11
Exit interviews with pregnant women with fever	13
Observations of antenatal care consultations	375
Observations of antenatal consultations in which women received malaria treatment	129
Exit interviews with pregnant women	412
Interviews with providers	31
Observations of clinic sessions for health education, patient load, and service delivery times	34
Reviews of facility supply and equipment records	27
Group discussions with facility staffs	22

that staff from all the health facilities could attend without disrupting facility services.) At least two providers from each of the 26 local facilities participated; in all, 60 providers and district health staff attended. In the morning, results were presented on the five major quality areas examined: treatment of fever in children under five and pregnant women, prevention of malaria in pregnant women, prevention of malaria at the household level, home management of fever, and malaria-care support systems. The results were aggregated, so that no facility specific information was revealed.

In the afternoon, participants divided into similar groups to identify priority areas for improvement at facility, district, and national levels. Organizing the workshop this way helped participants recognize that improvements in service quality depend on changes at the facility level, as well as on actions taken at district and national levels to improve supply logistics, clarify standards, and strengthen training and supervision.

Selected findings on management of fever. The assessment found that providers did not adequately take medical histories or perform physical exams to exclude other possible causes of fever before reaching the diagnosis of malaria. The diagnostic process was adequate* in only 18 to 42 percent of the cases observed, depending on the type of provider (see Figure 2).

Prescribed treatment was correct for a given diagnosis† in only 71 percent of the cases in which the patient was a child with fever (see Figure 3). Moreover, only 53 percent of patients received correct and complete drug therapy (drugs and doses, including frequency and duration).

* Observers did not re-examine children. An "adequate" diagnostic process was defined as having explored at least the symptoms of cough, fever, and diarrhea, in addition to following up a presenting symptom by taking a history and physical exam. To achieve the adequacy standard, the provider would have to: (a) count respiration or examine chest for breathing difficulty for children presenting with cough; (b) obtain information about presence of blood in stool for children presenting with diarrhea; and (c) obtain information about ear pain and/or discharge for children presenting with ear problems.

† Single dose of sulfadoxine pyrimethanine (S-P) plus antipyretic for uncomplicated malaria.

Figure 2. Adequacy of Diagnostic Process of Children Under Five, by Type of Provider (22 providers)

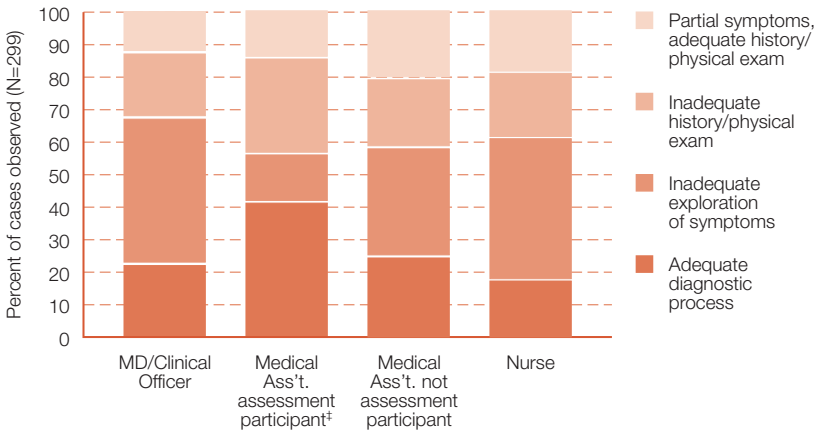
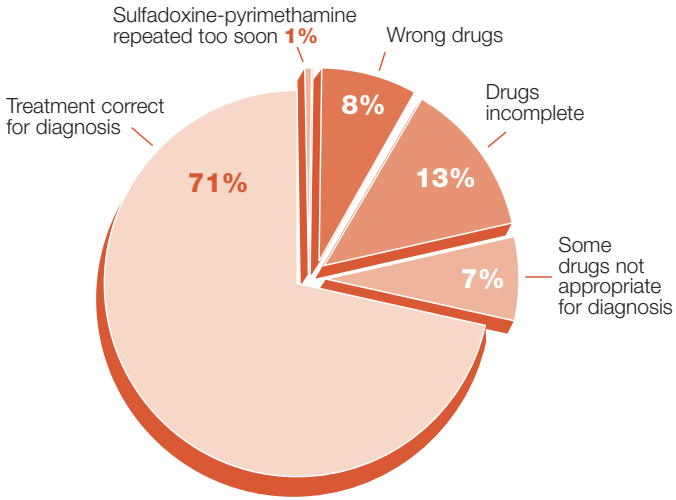
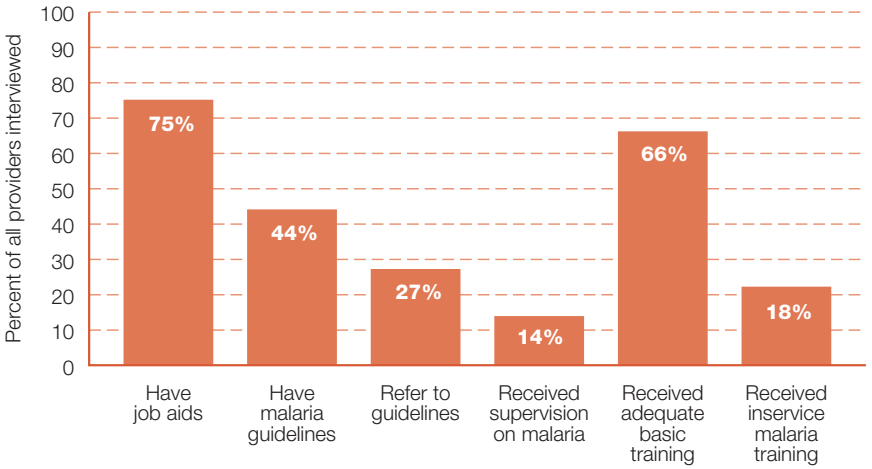


Figure 3. Appropriateness of Drugs Prescribed for Given Diagnosis of Children with Fever (N=206)



‡ Assessment results for the five medical assistants who had served on the data collection teams were analyzed separately because they had received an update on malaria standards during the May 1996 training, and they were aware of the specific activities being observed.

Figure 4. Issues of Quality Service Delivery Management (N=59)



Selected findings on service delivery management issues. Both antenatal and outpatient department providers felt they did not receive adequate training to manage fever cases. Use of existing malaria guidelines was quite low (as shown in Figure 4, only 44 percent of providers reported having the malaria guidelines), and supervision was infrequent.

Use of findings in the design of BIMI. In July 1996, the BIMI advisory committee convened a second workshop to review the conclusions of the assessment with a larger group of partners involved in the BIMI implementation. These included national, regional, and district public health officials, Blantyre City Council members, community leaders, and pharmaceutical industry representatives. Participants were asked to identify appropriate actions that could be incorporated into the BIMI Action Plan to address problems and opportunities identified by the baseline assessment. The resulting action plan proposed that BIMI:

- emphasize measures to improve compliance with standards
- update standards where appropriate

- make clinics more "user-friendly," especially for preventive services
- develop and field-test materials and methods for training health staff in the integrated management of pediatric fever and anemia
- develop information, education, and communication materials
- begin systematic problem-solving activities with teams at the facility level

Quality Assessment Insights

The Blantyre peer assessment of malaria-care services demonstrated that health providers without significant prior data collection experience or skills can competently collect quality data. Staff seemed to be comfortable with both observing and being observed by their peers. Participation of all of the district's facilities in the assessment probably contributed to provider acceptance of peer review. The peer assessment process capitalized on the practical insight and expertise of facility staff by giving them a lead role in analyzing and interpreting the findings.

Data collection by local peer staff served dual purpose. In addition to obtaining a snapshot of the strengths and weaknesses of malaria clinic services, the peer assessment also served as a method of communicating standards. Staff and supervisors used Malawi's updated malaria standards for conducting history and physical examinations to conduct the assessment. The reinforcement effect can be seen in Figure 2, which compares adequacy of diagnostic process among different types of providers. Relative to other providers

observed, the five medical assistants who also participated in conducting the assessment appeared to be able to take more thorough histories and perform more thorough physical examinations. Moreover, they achieved this while not taking more time in consultation.

Staff also gained skills in conducting facility-level quality assessments and learned about the strengths and limitations of different data collection methods. The process provided them with insight on how treatment and prevention activities were conducted at different health centers, which could serve as a basis for a discussion on best practices. Although peer assessment may have affected the quality of the data collected, building a base for ownership of assessment results and health provider participation in follow-up actions outweighed this possible limitation.

Triangulation of data helped to direct the BIMI Action Plan. Using different methods to obtain assessment information gave staff a more complete picture of the issues related to malaria clinic services to guide the BIMI Action Plan. For instance, one of the findings was that 53 percent of cases observed received "correct and complete drug therapy" (i.e., single dose of S-P plus antipyretic). However, since the supply inventory revealed that only 63 percent of the facilities had antipyretics, the drug supply should be improved, not provider knowledge.

Similarly, triangulation of observation and exit interviews confirmed that overall, counseling was weak. As a case in point, observation data revealed that only 10 percent of providers gave information or counseling on malaria prevention. To complement this information, exit interviews revealed what clients did not know, which was useful for targeting future counselling interventions. For example, few pregnant women interviewed knew the benefits of S-P beyond preventing them from "getting ill."

As a confirmation, anecdotal data from group discussions indicated misconceptions in the community about the potential harm of taking S-P. Exit interviews also showed areas of knowledge and common practices. For instance, while malaria prevention methods were fairly well known, only 14 percent of households used bed nets, and among these households, only about half of the family slept under a net. Such findings were extremely useful in guiding the direction of the BIMI Action Plan.

End Notes

1. George Mkondiwa, Secretary of Health, Malawi, as quoted in "Malawi spends $2.7 million annually on malaria." MISAet/ Panafrican News Agency, June 14, 2000.
2. Ettling M, McFarland DA, Schultz LJ, Chitsulo L. Economic impact of malaria in Malawian households. Tropical Medicine and Parasitology. 45(1):74-9, March 1994.
3. Op. cit., Mkondiwa.

Assessing Malaria Treatment and Control at Peer Facilities in Malawi: Summary

In 1996, the Ministry of Health and Population in Malawi, working with the Quality Assurance Project (QAP), carried out a quality assessment of malaria prevention and treatment services in Blantyre District. The purpose of the assessment was to provide information for the design of the Blantyre Integrated Malaria Initiative (BIMI) to improve malaria treatment and control among pregnant women and children under five. One healthcare provider from each of the district's 26 health facilities was trained in the use of the quality assessment tools and helped conduct the quality assessment. No provider assessed service quality at her or his own facility. District level staff supervised the teams. Assessment results were presented to representatives from all facilities in a one-day workshop at which participants identified priority areas for improvement.